REMARKS

Interview request

Applicants respectfully request a telephonic interview before and/or after the Examiner has reviewed the instant response and amendment, at the Examiner's convenience. Applicants request the Examiner call Applicants' representative at 858 720 5133.

Status of the Claims

Pending claims

Claims 31, 32, 36, 37, 44, 49, 50 and 52 to 80 are pending.

Claims allowed

Applicants thank the Examiner for allowing claims 31, 32 and 49.

Claims canceled in the instant amendment

Claim 67 was canceled, without prejudice or disclaimer. Accordingly, after entry of the instant amendment, claims 31, 32, 36, 37, 44, 49, 50, 52 to 66, and 68 to 80, will be pending and under examination.

Outstanding rejections

Claims 44, 50 and 66 to 80 are rejected under 35 U.S.C. §112, first paragraph, enablement requirement. Claims 66 and 72 to 74, are rejected under 35 U.S.C. § 112, first paragraph, written description requirement. Claims 36, 37, 44, 50, 52 to 65, 67 to 72, and 77 are rejected under 35 U.S.C. §112, second paragraph. Applicants respectfully traverse all outstanding objections and rejections of the claims.

Support for the Claim Amendments

The specification sets forth an extensive description of the invention in the pending and amended claims. For example, support for claims directed to methods comprising use of polypeptide or nucleic acid sequences having various sequence identities at or above about 90%, 95%, 97%, 99% or more, to exemplary sequences of the invention can be found, inter alia, on page 11, lines 20 to 30; page 42, lines 5 to 23; or in paragraphs [0161], [0162], [0242] and [0243] of U.S. Patent Application publication no. 20020012974 ("the '974 publication"). Support for claims

directed to using various hybridization conditions to determine if a nucleic acid is within the scope of the invention can be found, inter alia, in paragraphs [0157] to [0160], in the '974 publication.

Accordingly, Applicants submit that no new matter has been introduced and the instant amendment can be properly entered.

Rejection Under 35 U.S.C. § 112, First Paragraph, enablement

Claims 44, 50 and 66 to 80 are rejected under 35 U.S.C. §112, first paragraph, enablement requirement, because the specification allegedly does not enable any person skilled in the art to which the invention pertains or with which it is most nearly connected to make the invention commensurate in scope with the instant claims, as set forth in detail in paragraph 5, on pages 5 to 9, of the OA.

The Office acknowledges that the specification is enabling for a method of stereoselectively producing an alpha-substituted carboxylic acid having the structure recited in the claims (i.e., $C(R_1)(R_2)(E)(COOH)$, where R_1, R_2 and E are defined in the claims, using a nitrilase consisting of the sequence of SEQ ID NO:2 or SEQ ID NO:4, or encoded by a nucleic acid of SEQ ID NO:1 or SEQ ID NO:3. Claims 31, 32 and 49 are allowed.

However, it is alleged that the genus of nitrilase enzymes used in the methods of claims 44, 50 and 66 to 80, are not enabled by the specification because, inter alia, of the breadth of the genus of enzyme used in the claimed methods (see, e.g., the paragraph spanning pages 4 to 5, of the OA).

The instant amendment should sufficiently address this issue; after entry of the instant amendment, the scope of the genus of enzymes used in the claimed methods is significantly narrowed to a genus where the nitrilase species therein have an amino acid sequence having at least 90% (versus 80%) sequence identity to an amino acid sequence consisting of SEQ ID NO:2 or SEQ ID NO:4, or the species are encoded by a nucleic acid having at least 90% (versus 80%) sequence identity to an nucleic acid sequence consisting of SEQ ID NO:1 or SEQ ID NO:3. After entry of the instant amendment, it is clarified that the hybridization conditions are "very high stringency" conditions, see, e.g., paragraph [0157], of the '974 publication.

The Office also notes that while the specification provides a working example (Example 1, paragraphs [0287] to [0293], of the '974 publication) using the exemplary enzymes of the invention, no working examples using other species within the genus of enzymes used in the claimed methods

(see, e.g., section (2) of page 5, lines 5 to 12; and page 7, lines 3 to 4, of the OA). However, as noted in MPEP 2164.02 (pg 2100-187, 8th ed., rev. 2, May 2004):

> The presence of only one working example should never be the sole reason for rejecting claims as being broader than the enabling disclosure, even though it is a factor to be considered along with all the other factors. To make a valid rejection, one must evaluate all the facts and evidence and state why one would not expect to be able to extrapolate that one example across the entire scope of the claims.

Applicants respectfully aver that the working example presented in the specification is sufficient to enable the skilled artisan to practice the claimed method; all that needs to be done is to substitute an alternative specie of the genus with the exemplary nitrilase used in the working example. The Office has presented insufficient reasons as to why one would not expect to be able to extrapolate that one example across the entire scope of the claims.

Applicants also wish to reiterate Dr. Grace DeSantis's Rule 132 expert declaration statements, as submitted with the response of April 11, 2005. Dr. DeSantis declared that the state of the art at the time of the invention and the level of skill of a person of ordinary skill in the art, e.g., determining substrate reactivity, for nitrilase enzymes, was very high, and it would not have required any knowledge or guidance beyond that provided in the specification as to which substrates were useful with the specific claimed enzymes. Dr. DeSantis declared that at the time of the invention, methods for screening for enzyme substrates were sufficiently comprehensive, routine and predictable at the time of the invention to easily identify which the aldehydes, ketones, cyanide-containing compounds, and ammonium containing compounds to stereoselectively produce an α-substituted carboxylic acid using nitrilases encoded by SEQ ID NO:2 and SEQ ID NO:4. Dr. DeSantis discussed Robertson et al., Applied Environ. Microbiol. 70:2429-36 (2004), declaring that Robertson demonstrates the routine nature of determining substrate specificity, and that such experiments demonstrated the routine nature of screening for substrate reactive to a particular substrate, the predictability of such screening, and ease of determining positive results. Dr. DeSantis declared, in summary, that no undue experimentation would be required and that the specification provided sufficient guidance to one of ordinary skill in the art to make and use the genus of nitrilases.

Also as discussed in Applicants October, 2005, response, nitrilases and their substrates and methods for determining the range of substrates for any particular nitrilase enzyme were known in

the art at the time of the invention. Nitrilases were known to have the capacity to be enzymatically active on a variety of substrates. Dr. DeSantis also declared that the state of the art at the time of the invention and the level of skill of a person of ordinary skill in the art, e.g., determining substrate reactivity, for nitrilase enzymes, was very high, and it would not have required any knowledge or guidance beyond that provided in the specification as to which substrates were useful with the specific claimed enzymes.

In light of Applicants' remarks in this and earlier responses (all expressly incorporated herein), including the submitted expert declaration by Drs. Chaplin and DeSantis, Applicants respectfully submit that the specification provides sufficient enablement to meet the requirements of 35 U.S.C. § 112, first paragraph, and the rejection can be properly withdrawn.

Rejection Under 35 U.S.C. § 112, First Paragraph, written description

Claims 66 and 72 to 74, are rejected under 35 U.S.C. § 112, first paragraph, written description requirement, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, as set forth in detail in paragraph 6, on pages 9 to 10, of the OA.

The instant amendment addresses this issue; see amended independent claims 66 and 72.

Issues under 35 U.S.C. §112, second paragraph

Claims 36, 37, 44, 50, 52 to 65, 67 to 72, and 77 are rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for reasons set forth in detail in paragraphs 7 to 11, on pages 11 to 12, of the OA. The instant amendment addresses these issues.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully aver that the Examiner can properly withdraw the rejection of the pending claims under 35 U.S.C. §112, first and second paragraphs. In view of the above, claims in this application after entry of the instant amendment are believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket No. 564462006600. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

As noted above, Applicants have requested a telephone conference with the undersigned representative to expedite prosecution of this application. Before, or after, the Examiner has reviewed the instant response and amendment, please telephone the undersigned at 858 720-5133.

Dated: November 14, 2006

Respectfully submitted,

By _____

Gregory P. Einhorn
Registration No.: 38,440
MORRISON & FOERSTER LLP
12531 High Bluff Drive
Suite 100
San Diego, California 92130-2040
direct dial 858 720 5133
general office 858 720 5100
fax direct 858 523 5933
fax office 858 720 5125
email geinhorn@mofo.com